

## **AMENDMENTS TO THE CLAIMS**

The following listing of claims will replace all prior versions and listings of claims in the application.

### **LISTING OF CLAIMS**

1. **(Previously Presented)** A sliding opening and closing device, comprising:

A main plate;

A slide plate, which is linked to said main plate to be slidable relative to the main plate;

An elastic part which is supported by said main plate and generates an elasticity power in one direction; and

A power transformation member having one end portion coupled to the elastic part and another end portion pivotally coupled to the slide plate, the power transformation member configured for receiving the elasticity power of said elastic part, so that on a particular position in the moving path of said slide plate, the power transformation member can apply the elasticity power to said slide plate in the direction to be closed when said slide plate is in the closing position, and apply the elasticity power to said slide plate in the direction to be opened when said slide plate is in the opening position.

2. **(Previously Presented)** The sliding opening and closing device as claimed in claim 1, wherein at least one set of guide slits are formed on said slide plate along the moving direction, and wherein guide ribs, which are linked to be slidable to each of said guide slits, are formed on said main plate.

3. **(Previously Presented)** The sliding opening and closing device as claimed in claim 1, wherein one end portion of said elastic part is supported by said main plate, the other end portion of said elastic part is supported by said power transformation member, and said elastic part is a torsion spring generating a widening elastic force.

4. **(Previously Presented)** The sliding opening and closing device as claimed in claim 1, wherein the one end portion of said power transformation member is linked to said elastic part and is guided on said main plate so that the one end portion can move only in the orthogonal direction toward the moving direction of said slide plate, and wherein the power transformation member comprises a pivoting arm which is linked to said slide plate so as to be able to be pivoted.

5. **(Previously Presented)** The sliding opening and closing device as claimed in claim 1, wherein said power transformation member comprises moving blocks which are fixed to receive the elasticity power of said elastic part, and wherein said slide plate forms a cam groove comprising a first slope having an angle applying power to said slide plate in the direction to be opened by receiving the elasticity power of said moving blocks and a second slope which is linked to said first slope and has an angle applying power to said slide plate in the direction to be closed.

6. **(Previously Presented)** The sliding opening and closing device as claimed in claim 5, wherein said moving blocks comprise:

A cam pivot, which is linked to said elastic part, has a projection, which is linked to be slidable to said cam groove;

A bushing which is linked to be slidable to an elongated hole which is formed in the direction where the elasticity power of said elastic part is applied to said main plate; and

A fastener, which penetrates, said bushing and connects to said cam pivot.

7. **(Previously Presented)** The sliding opening and closing device as claimed in claim 1, further comprising a guide member which guides a connection part of said elastic part and said power transformation member to move along the direction where the elasticity power of said elastic part is applied to, and which also generates damping force to said power transformation member by allowing said slide plate not to move in the direction to be closed in the state that said slide plate is closed into said main plate

and allowing said slide plate not to move in the direction to be opened in the state that said slide plate is opened from said main plate.

8. **(Previously Presented)** The sliding opening and closing device as claimed in claim 7, wherein said guide member comprises a guide pin connecting said elastic part and said power transformation member, and an elongated hole is formed on said slide plate for guiding said guide pin to move in an orthogonal direction toward the moving direction of said slide plate.

9. **(Previously Presented)** The sliding opening and closing device as claimed in claim 1, wherein said power transformation member comprises a link having a first end coupled to the elastic part and to said slide plate to enable pivot rotation therearound, and a second end is coupled to the main plate so that said elastic part can move straightly as much as a predetermined distance and pivot around the position where said elastic part is connected to said main plate.

10. **(Previously Presented)** The sliding opening and closing device as claimed in claim 9, wherein a first pivot hole is formed on the first end of the link and is connected to a first rotation pivot projecting from said slide plate, and wherein an elongated hole is formed on the second end of the link, which provides space to a second rotation pivot projecting from said main plate to move.

11. **(Previously Presented)** The sliding opening and closing device as claimed in claim 10, wherein said opening and closing device limits the moving distance of said slide plate by making the end of said elongated hole to be hooked to said second rotation pivot in the position where said plate is opened and closed toward said main plate.

12. **(Original)** The sliding opening and closing device as claimed in claim 11, wherein a second boss is formed on said slide plate and a locking portion is formed on said link, which limits the rotation of said link by being hooked by said second boss before said slide plate moves to the position where said main plate is completely closed,

thereby making the moving distance of the direction where said slide plate is closed to be shorter than the moving direction where said slide plate is opened.

13. **(Previously Presented)** The sliding opening and closing device of a cellular phone as claimed in claim 10, wherein one end of the elastic part is coupled to a first boss and, the other end of the elastic part is linked to said second rotation pivot to be rotated, the elastic part including a torsion spring for generating an elasticity power in a widening direction.

14. **(Previously Presented)** A sliding opening and closing device, comprising:  
a main plate;  
a slide plate slidably coupled to the main plate;  
an elastic part supported by the main plate, the elastic part generating an elasticity power;  
a power transformation member for receiving the elasticity power of the elastic part, such that on a particular position in the moving path of the slide plate:  
the power transformation member applies the elasticity power to the slide plate in the direction to be closed when the slide plate is in the closing position, and  
the power transformation member applies the elasticity power to the slide plate in the direction to be opened when the slide plate is in the opening position;  
wherein said power transformation member comprises a first block defining a first pivot hole, which is connected to be rotated around a first rotation pivot projecting from said slide plate;

At least one shaft part fixed to said first block; and

A second block defining a penetrating hole in which the shaft part is slidably engaged, and a second pivot hole to which is rotatably coupled a boss formed on the main plate.

15. **(Previously Presented)** The sliding opening and closing device as claimed in claim 14, further comprising a fitting piece at the shaft part penetrating said

penetrating hole, the fitting piece being hooked by said second block at the position where said slide plate is closed and opened, whereby the moving distance of said slide plate is limited.

16. **(Previously Presented)** The sliding opening and closing device as claimed in claim 14, wherein said first block has a non-circular form, and further comprising a projection for limiting the rotation of said first block on the projection of said slide plate before said slide plate moves to the position where said slide plate is completely closed toward said main plate, thereby making the moving distance in the direction where said slide plate is closed to be shorter than the moving distance in the direction where said slide plate is opened.

17. **(Previously Presented)** The sliding opening and closing device as claimed in claim 14, wherein said elastic part is connected to said shaft part and wherein said elastic part comprises a compression spring generating an elasticity power in the direction where said first block and said second block move away from each other.

18. **(Previously Presented)** A sliding opening and closing device, comprising:  
a main plate;  
a slide plate slidably coupled to the main plate;  
an elastic part supported by the main plate, the elastic part generating an elasticity power;  
a power transformation member for receiving the elasticity power of the elastic part, such that on a particular position in the moving path of the slide plate:  
the power transformation member applies the elasticity power to the slide plate in the direction to be closed when the slide plate is in the closing position, and  
the power transformation member applies the elasticity power to the slide plate in the direction to be opened when the slide plate is in the opening position;  
wherein the power transformation member comprises a first block which is linked to be rotatable to a first spot of said main plate; a second block which is linked to be

rotatable to a second spot of said slide plate which has a different moving path from said first spot; and a bar member which connects the first block with the second block, wherein said elastic part is coupled to said bar member and generates an elasticity power in a direction of extending said first block and said second block.

19. **(Previously Presented)** The sliding opening and closing device as claimed in claim 18, wherein the device is configured such that based on the point of inflection in the moving course of the slide plate, at a closed position of said slide plate, said second block is positioned in a direction of closing into said first block, so that the elasticity power of said elastic part can affect in a direction of closing said slide plate; while at an open position of said slide plate, said second block is positioned in a direction of opening from said first block, so that the elasticity power of said elastic part can affect in a direction of closing said slide plate.

20. **(Previously Presented)** The sliding opening and closing device as claimed in claim 18, wherein said second block is installed at the place where the moving distance of said slide plate when being opened can be shorter than the moving distance of said slide plate when being closed.

21. **(Previously Presented)** The sliding opening and closing device as claimed in claim 18, wherein the bar member comprises:

a female shaft fixed to one side of said first block or said second block, the female shaft having a length shorter than the beeline between said first block and said second block; and

a male shaft fixed to the other side of said first block or said second block, the male shaft having a length shorter than the beeline between said first block and said second block, the male shaft being slidable in said female shaft during the opening and the closing of said slide plate.

22. **(Previously Presented)** The sliding opening and closing device as claimed in claim 18, wherein said elastic part comprises at least one compression spring.

23. **(Previously Presented)** The sliding opening and closing device as claimed in claim 1, wherein said elastic part generates a tension, and said power transformation member comprises at least two link rows, which connect a first spot of said main plate to a second spot of said slide plate, each of which comprises at least two links having one or more refraction points, and which receive the tension of said elastic part and generate an elasticity power in a direction of extending said first and said second spots.

24. **(Previously Presented)** The sliding opening and closing device as claimed in claim 23, wherein said elastic part comprises at least one tension spring.

25. **(Previously Presented)** The sliding opening and closing device as claimed in claim 23, wherein said power transformation member supplies an elasticity power in a direction of closing said slide plate at a closed position of said slide plate based on the inflection point, while it supplies the elasticity power in a direction of opening said slide plate at an open position of said slide plate based on the inflection point.

26. **(Previously Presented)** The sliding opening and closing device as claimed in claim 23, wherein said power transformation member controls the moving distance in the direction of opening said slide plate to be shorter than the moving distance in the direction of closing said slide plate.

27. **(Previously Presented)** The sliding opening and closing device as claimed in claim 1, further comprising a compensation elastic means which generates an elasticity power in the same direction as said elastic part as to the direction of moving said slide plate, while generating an elasticity power in a symmetrical direction to the elasticity power of said elastic part as to the perpendicular direction of moving said slide plate, so that said slide plate can receive a uniform force as to the perpendicular direction.

28. **(Previously Presented)** The sliding opening and closing device as claimed in claim 27, wherein said compensation elastic means comprises a first block which is connected to be rotatable to the first spot of said main plate; a second block which is connected to be rotatable to the second spot of said slide plate; a guide shaft which connects said first block to be elastic to said second block; and an elastic part which is coupled to said guide shaft, and generates an elasticity power in a direction of extending said first and said second blocks.

29. **(Previously Presented)** The sliding opening and closing device of a portable terminal as claimed in claim 28, wherein the device is configured such that based on the point of inflection in the moving course of said slide plate, at a closed position of said slide plate, said second block is positioned in a direction of closing into said first block, so that the elasticity power of said elastic part can affect in a direction of closing said slide plate; while at an open position of said slide plate, said second block is positioned in a direction of opening from said first block, so that the elasticity power of said elastic part can affect in a direction of closing said slide plate.

30. **(Previously Presented)** The sliding opening and closing device of a portable terminal as claimed in claim 28, wherein said second block is installed at the place where the moving distance of said slide plate when being opened can be shorter than the moving distance of said slide plate when being closed.

31. **(Previously Presented)** The sliding opening and closing device of a portable terminal as claimed in claim 28, wherein said guide shaft comprises a female shaft which is fixed to one side of said first block or said second block, and the length of which is shorter than the beeline between said first block and said second block; and a male shaft which is fixed the other side of the first block or the second block, and the length of which is shorter than the beeline between said first block and said second block and is slidable in said female shaft during the opening and the closing of said slide plate.



32. **(Previously Presented)** The sliding opening and closing device as claimed in claim 28, wherein said elastic part comprises at least one tension spring.

33. **(Currently Amended)** A portable terminal having a sliding opening and closing device, comprising:

a main body defining a space;

a sub body coupled to said main body such that the sub body is slidable relative to the main body between at least a first position in which the sub body is at least partially inserted into the space defined by the main body and a second position in which the sub body is at least partially protruding out from space defined by the main body;

a stoppering part for fixing said sub body relative to the main body in at least one of the first and second positions; and

an elastic part which supplies an elasticity power in a direction where said sub body is slidably inserted into or slidably removed from the space defined by the main body;

**wherein a keypad is placed on said main body, and a liquid crystal screen is placed on said sub body such that the liquid crystal screen is not exposed when the sub body is in the first position and such that the liquid crystal screen is exposed when the sub body is in the second position.**

34. **(Cancelled)**

35. **(Previously Presented)** The portable terminal having the sliding opening and closing device as claimed in claim 33, wherein the space is formed from the side direction to the inside of said main body.

36. **(Currently Amended)** ~~The portable terminal having the sliding opening and closing device as claimed in claim 33,~~ **A portable terminal having a sliding opening and closing device, comprising:**

a main body defining a space;

a sub body coupled to said main body such that the sub body is slidable relative to the main body between at least a first position in which the sub body is at least partially inserted into the space defined by the main body and a second position in which the sub body is at least partially protruding out from space defined by the main body;

a stoppering part for fixing said sub body relative to the main body in at least one of the first and second positions; and

an elastic part which supplies an elasticity power in a direction where said sub body is slidably inserted into or slidably removed from the space defined by the main body;

wherein said stoppering part comprises a sliding bar having a hook hanging in a fitting boss of said sub body, the sliding bar also having a first elongated hole in a sliding direction, and wherein one end portion of the sliding bar comes in and out from the inside of said main body to the outside thereof; a first pin which is installed in said main body and coupled to said first elongated hole; and a compression spring flipping said sliding bar in a direction where said hook is hung in said fitting boss.

37. (Currently Amended) ~~The portable terminal having the sliding opening and closing device as claimed in claim 33,~~ A portable terminal having a sliding opening and closing device, comprising:

a main body defining a space;

a sub body coupled to said main body such that the sub body is slidable relative to the main body between at least a first position in which the sub body is at least partially inserted into the space defined by the main body and a second position in which the sub body is at least partially protruding out from space defined by the main body;

a stoppering part for fixing said sub body relative to the main body in at least one of the first and second positions; and

**an elastic part which supplies an elasticity power in a direction where said sub body is slidably inserted into or slidably removed from the space defined by the main body;**

wherein said elastic part comprises a first cross bar, one end of which is supported by said main body, and the other end of which is supported by said sub body; a second cross bar which is positioned to be crossed with said first cross bar, one end of which is supported by said main body, and the other end of which is supported by said sub body; a second pin which is coupled to the centers of said first and said second cross bars, and which makes said first and said second cross bars to be rotated relatively; and a torsion spring which is coupled to said second pin, and which supplies an elasticity power in a direction where said first and said second cross bars push said sub body.

38. **(Previously Presented)** The portable terminal having the sliding opening and closing device as claimed in claim 37, wherein the elastic part comprises at least two elastic parts in serial.

39. **(Previously Presented)** The portable terminal having the sliding opening and closing device as claimed in claim 37, wherein said elastic part further comprises a first bracket, which is coupled to one end of each of said first and said second cross bars, and which is fixed to said main body; a second bracket, which is coupled to the other ends of said first and said second cross bars, and which is fixed to said sub body; and a pair of guide rails, which are respectively fixed to both sides in said main body and which form a guide groove to which both ends of said first and said second brackets are coupled to be slidable.

40.-54. **(Cancelled)**

55. **(Previously Presented)** The sliding opening and closing device as claimed in claim 14, wherein said elastic part comprises at least one compression coil spring

received over at least a portion of the shaft part generally between the first and second blocks.

56. **(Previously Presented)** The sliding opening and closing device as claimed in claim 18, wherein said elastic part comprises at least one compression coil spring received over at least a portion of the bar member generally between the first and second blocks.